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USE OF RADIO TO PROVIDE MODELS AND
REINFORCERS IN BEHAVIOR THERAPY:
INCREASING COMPLIANT BEHAVIOR IN RETARDED CHILDREN

A Thesis
Presented to the
Department of Psychology

and the
Faculty of the Graduate College
University of Nebraska

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
University of Nebraska at Omaha

by
Richard Warner

May 1983

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THESIS ACCEPTANCE

Accepted for the faculty of the Graduate College,
University of Nebraska, in partial fulfillment of the
requirements for the degree M.A. (Master of Arts)
University of Nebraska at Omaha.

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April 27, 1983

Date

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Use of Radio to Provide Models and Reinforcers
in Behavior Therapy: Increasing Compliant
Behavior in Retarded Children

INTRODUCTION

Overview of Thesis

Our age is an electronic one; electronic gadgetry has proliferated in the home, and modern media devices, especially radio and television with their continuous barrage of information and programming have been long taken for granted. Children learn much from radio and television, acquiring a variety of information from these electronic sources which is reflected in their dress, speech, and musical preferences (Haney & Ullmer, 1975; Potter, 1978a; Reeves & Miller, 1978). Indeed a great deal of controversy has become associated with determining what sorts of things children have been learning from media (e.g. Lefrancois, 1973). It is estimated young children spend more than 64% of their waking hours before the television set, taking in some 20 to 24 hours of viewing per week (Neuman, 1980).

Media usage as a learning tool isn't confined solely to the incidental learning taking place outside the classroom from commercial broadcasting; educational institutions have for years been using media devices (taken here to include

any form of electronic audio, video, or visual presentation, as designated by Wyman, 1969). In addition to classroom use of projectors, audio and video tape recorders and so forth, there is a whole array of programmed and individual instructional devices for exceptional children and students in general (Brown, 1973; Lysaught, 1964; Wittich & Schuller, 1976).

While use of audio-visual aids has increased, most often the electronic media play a very limited role in the educational process with most of the sophistication and potential (e.g., that children attend to it, it can be one-to-one) going untapped (Erickson & Curl, 1972; Potter, 1978b). Electronic media usage remains a discrete entity; something that is used for special purposes at special times and not a coordinated part of classroom flow.

Perhaps part of the problem is that some media devices have become too sophisticated... or at least too complicated. Many of the modern devices, particularly video tape recorders, individual instructional devices, computer aided instruction, and video discs, contain sufficient numbers of switches and controls to scare off the less electronically experienced. Additionally, as a publication of the National Association of Secondary Principals (1973) points out, such expensive and elaborate equipment arrays are confined to only a limited number of actual school facilities. Maynard (1971) notes that even among the school

systems having a good assortment of modern electronic devices to work with, few teachers or staff have the skills or willingness to acquire the skills necessary to utilize these teaching aids to their intended potential. It is also interesting to note that while designers' attempts have been aimed at using equipment to provide a more individualized instruction approach, in practice most media usage is with groups.

The present thesis attempts to explore a means by which an electronic medium's teaching advantages might be more fully exploited. Some of these common problems of conventional behavior modification techniques (e.g., finding time for the program in the subjects' and staffs' schedules, inattention to a model, satiation, lack of generalization, durability) might be minimized by capitalizing on the potentials of electronic media. In addition if the information yielded in the present study is to be of any practical value, suggested media uses must be kept simple and inexpensive.

Adolescents and youth spend a good deal of time listening to radio (Radio Advertising Bureau, 1982) and appear to be influenced by what has been broadcast. Because of its presence in the natural environment, ease of use, and low cost it seems to be ideal as a vehicle for behavioral intervention. Noncompliance is one of a group of behaviors designated as limiting a child's success in the school

environment (Budd, Leibowitz, Riner, Mindell, & Goldfarb, 1981) and is frequently found to be present at a significant level in retarded youngsters when they are introduced to a classroom setting (Forehand, Sturgis, McMahon, Augar, Green, Wells, & Breiner, 1979). Listening to the radio might be utilized as a reinforcer and it might be possible to systematically manipulate the radio programming to provide models in a program to increase the relative frequency of prosocial behavior in retarded adolescents.

Modeling Research with the Retarded

In a strict sense observational learning can be divided into two types. Those situations involving a conscious effort in the learning process are termed "imitation learning" while the term "modeling" is reserved for examples of observational learning with no conscious effort involved (Mercer & Algozzine, 1977). These authors go on to note however that in practice this distinction isn't usually made, thus obviating the need for determination of what portions of observational acquisition can be attributed to conscious versus unconscious endeavors. In the present thesis the terms "imitation learning" and "modeling" are used synonymously.

The basic format of a modeling procedure involves a modeled stimulus (S_m) that serves as a cue to set the occasion for an imitative response (R) which shares physically

or topographically similar attributes with the modeled stimulus. The imitative response is strengthened by application of a positive reinforcer upon its emission (Sundel & Sundel, 1975).

Mercer and Algozzine (1977) elaborate on this by observing that the modeling episode might have three effects: 1) establishment of a new response, 2) increasing or facilitating an existing response, or 3) reduction of an existing response.

Modeling is a frequent component of behavior modification programs, showing effectiveness in simple motor, conceptual, and social-personal responses (Litrownik, Franzini, & Turner, 1976). Specific applications encompass diverse areas, such as training assertive behavior, speech therapy, reducing fear of snakes, increasing usage of descriptive adjectives, increasing social interactions, and increasing cooperative acts (Gelfand & Hartmann, 1975). Modeling is a useful approach as an alternative to shaping a behavior or when attempting to teach a complex behavior, either motor (e.g., Gilbert, Johnson, Spillar, McCallum, Silverstein, & Rosenbloom, 1982) or social (Gilbert, et al., 1982).

Bandura's work in 1961 with models on film is well established, and in an overview of modeling Glover and Gary (1975) note models have been successfully employed in audio, video, and print formats. Live models can also be effectively used.

Gadbery (1981) has experimented with the effects of camera cuts and various types of music on selective attention and verbal and motor imitation with mentally retarded adults. He found variables in camera technique and music type that relate to effectiveness of information transfer in modeling.

Observational learning has been demonstrated in some cases to be as effective as intentional training. Using educable mentally retarded (EMR) individuals Ross, Ross, and Downing (1973) were able to train their subjects to use mediational links using observational learning in one group and an intentional training approach in the other group. While the observational learning group initially took longer to master the task they demonstrated greater persistence and caught up to the intentional learning group. The latency of acquisition in the former group could have resulted from their early tendency to imitate now rewarded aspects of the model (such as its mannerisms); Ross and coworkers speculated the members of this group kept trying because they saw the model achieve success and reasoned they might expect a similar end.

Modeling research has been undertaken with young people of various abilities from severely retarded to normal children. Litronik (1972), using a fairly simple motor task, found comparable performance in normal and EMR children when the correct procedure was modeled. Trainable mentally

retarded (TMR) children yielded like results in a later study (Litronik, Franzini, & Turner, 1976). Similar performance between normal and mentally retarded children with mental ages of less than ten years were found in a task requiring formation of plurals (Clinton & Boyce, 1975). Smith (1982) reported positive results in social skills training of fourth, fifth, and sixth grade students of varying backgrounds and intellectual abilities. Apolloni and Tremblay (1978) reviewed studies citing modeling transfer of verbal and gestural actions in normal toddlers as young as 12 to 14 months. These experimenters' found peer behavior imitation existing in 12-24 month old children.

Lustman and Zigler (1982) hold that modeling is even more effective for mentally retarded children than nonretarded youngsters. The authors present the view that children of limited intellectual ability lack confidence in their own cognitive solutions based on their frequent failures encountered in problem solving attempts. This lack of confidence makes them more likely to look to the behavior of others for guidelines to action. Leahy and Balla (1982) also have found a relationship between self image and imitativeness working with mentally retarded and nonretarded adults.

As a rule, in behavior modification, it is hoped the target behavior will generalize to other related behaviors, situations or at least persist after the treatment program

is terminated (Baer, Wolf, Risley, 1968). Follow-up measures after observational learning experiments usually find the concepts to be partially retained after a delay. This frequently isn't assessed by modeling workers, but some do include a retention measure. Using EMR children and tasks from the Leiter International Performance Scale, Barry and Overman (1977) found more errors twenty-four hours following exposure to a model than seen immediately afterward. Even with the performance decrement however, scores of the experimental group significantly exceeded those of the control group which were not exposed to the models. The investigators did locate what may be an interaction between retention and type of model, finding that while groups of subjects with peer models did better on the target task than those with adult models and those with no models, the latter two groups were more consistent showing less tapering off on the second day than the peer model group. Despite the losses in performance the second day, the peer model group still showed fewer errors than individuals in the other two groups. In a novel motor sorting task, Rosenthal, Alford, and Rasp (1972) found both immediate generalization of a sorting technique possible and measured significant though diminished retention of the behavior five weeks post treatment. Ross, Ross, and Downing (1973) reported no loss of efficiency two months following their procedure to teach EMR children use of verbal mediation

links in a memory task. Clinton and Boyce (1975) noted good generalization of the concept of plurals in words, and gains in prosocial behavior have been maintained post-treatment when special care was taken to enhance their generalization (Tofte-Tipps, 1982).

Perhaps the most encouraging reports of generalization and retention come from Ross (1969). She used a consistent model of her subjects' age in various audio and visual presentations attempting to model six different verbal and motor behavioral sequences (e.g., answering the telephone technique, paired-associates, and so forth). The author found her subjects acquired the desired tasks and displayed them well in a follow-up test one week later. Even more encouraging was the fact that the children continued to talk about the model (named "Polly") for months after the treatment, asking their teacher how she was and sending messages via the teacher to her. Polly had become more than just a neutral figure to the subjects and thus an effective vehicle to model desirable behavior sequences.

Marsten (1979) challenges the tendency to demand that behavioral interventions be solely directed at the client's specific deficit skills. The author states that therapeutic interventions by behaviorists have a systemic impact and a procedure directed at one area may well demonstrate as great or greater effects elsewhere and he proposes these broad interventions be cultivated and assessed by broader

measurement procedures.

Bandura in 1969 designated attentional processes at significant variables in modeling, and since mentally retarded individuals frequently manifest attentional deficits observational learning tasks aimed at such subjects may be facilitated by increased salience and number of cues which call attention to behavior to be imitated.

This line of thinking has been termed the "attention deficit hypothesis" (Bandura, 1969) and in general maintains that retarded children suffer from a lower than normal initial probability of abstracting the relevant dimensions from a model or a model's behavior, rather than from a poor ability to learn these cues and behaviors. Based on this assumption it has been suggested that training of retarded children through modeling may be facilitated by "engineering of attention", or such manipulations that the subject's attention will be focused on the salient portions of the modeling episode (Nathanson, 1977). The author concludes the effects of low intelligence may be minimized by the use of relevant stimuli having high attention value.

Inclusion of cues that call specific attention to aspects of the modeled behavior seem to facilitate acquisition of a behavior and enhance retention (Forehand & Yoder, 1973). In a study using retarded children aged seven through sixteen (IQ = 50 - 80) these investigators attempted to focus attention on several aspects of the model's

behavior on a task involving matching objects or designs on blocks with objects on a board. Their results showed a faster mastery of the behavior in the group with the cues provided.

Rosenthal, Alford, and Rasp (1972) varied the amount of cues provided in accompaniment to a task modeled to normal second grade students, giving either no additional cues, low-informational statements, high informational statements, or high information statements plus expression of the rule governing the concept. Their results showed the children attained the concept (clustering objects by class) more quickly and showed increased generalization when high information content statements were presented during the modeling. Immediately following the modeling episode the group given the underlying concept along with a model showed best acquisition of the target behavior; this superiority disappeared, however, in a five week post-treatment follow-up measure; at that time both modeling groups showed equal retention.

Clinton and Boyce state that complementing the modeling procedure with an explicit statement of the rule frees the subject from having to abstract the rule underlying the model's responses himself, and ascertains that the correct rule is known. The subject may then use the principal to generate rule-consistent responses using appropriate portions of the model's behavior and minimizing the frequently seen

imitation of irrelevant unrewarded aspects of the model's behavior.

Litrownik, Franzini, and Turner (1976) suggest concept acquisition may not be as simple as stated previously; they postulate an interaction between provision of the conceptual rule and whether massed or distributed modeling was employed, in addition to consideration of task difficulty. The investigators distinguished between massed demonstration (observational learning consisting of modeled demonstrations of the entire task or series of tasks repeated several times before the subject has the opportunity to attempt the task himself) and distributed demonstration (defined as imitation in which a single demonstration is presented and the subject is then asked to perform that specific task himself before a second demonstration is presented). The authors further distinguished between transfer of conceptual responses on the part of the subjects (generalization to similar tasks) and response matching (performance of a task identical to the one modeled). Using trainably mentally retarded adolescents with a live model, the investigators obtained results suggesting massed demonstration leads to better conceptual transfer and distributed demonstration results in superior response matching, at least for more difficult tasks; for easier tasks both appeared to be equally effective. Additionally provision of the rule facilitated transfer of complex concepts with massed modeling.

Lustman and Zigler (1982) speculate that imitation can't be explained by cognitive process alone but rather is better thought of as a combination of "cognitive process and personality dynamics produced by the life histories and motivational structures of the individual being investigated."

While provision of the underlying rule and other features designed to call attention to the modeling procedure or various aspects of it seem to facilitate transfer, the limited evidence available suggests role playing of the modeled behavior, at least for more complex social behaviors, doesn't significantly effect acquisition of that behavior. No significant differences were seen between experimental groups in a study (Holoka-Hegedus, 1974) in which subjects (normal kindergarten and first grade children) viewed a filmed model illustrating cooperative behavior following which one group was observed in free play, while another group was allowed to role play the film they had just seen and then were observed in play. Both groups showed significant increases in cooperative behavior over a control group that had not seen the film. The performance of the group that had seen the film and role played and the group that had simply seen the film was similar (Holoka-Hegedus, 1974).

Once a child performs the modeled task he should receive a reward of some type so that the behavior is

incorporated into his behavioral repertoire; learning of the behavior requires reinforcement when it is imitated (Lefrancois, 1973).

Many factors influence the reinforcing value of modeling. A prime factor is that the model illustrating the desired behavior be as similar to the subject as possible; the more similar the greater the transmission of imitative behaviors (Glover & Gary, 1975; Lustman & Zigler, 1982). The similarity is most critical in terms of background and group membership (Rosekrans, 1976), with age and sex of the model also being important, particularly for younger (preadolescent) subjects (Barry & Overmann, 1977). The consequences of the model's actions should be obvious (Glover & Gary, 1975), and the episodes should occur in contexts familiar to the subject so that the natural reinforcement scheme may be illustrated (Gelfand & Hartmann, 1975). While simple preaching is ineffective (Staub, 1975) a statement of the rule underlying the rewarded behavior is found to contribute to the retention of the behavior (Clinton & Boyce, 1975; Dusek, 1978; Litrownik, Franzini, and Turner, 1976). Stein and Freidrick (1975) note that just labeling the behavior (e.g., "this is cooperation") enhances learning it for young children. Finally observational learning of prosocial behavior is aided by illustrating the feelings of the recipients of the behavior; the positive consequences of the behavior on others would be

made obvious (Isen & Levin, 1972).

Radio as a Means to Promote Appropriate Behavior
in a Retarded Individual

Media as a Reinforcer

A wide variety of consequences have been found to serve as positive reinforcers in behavior modification programs; one that has been demonstrated readily applicable to mentally retarded children is music. Miller (1976) permitted his EMR clients, ages nine to fourteen years, to listen to rock music for a few minutes, contingent upon their performance in arithmetic. He found the procedure to be effective in promoting arithmetic mastery. Music has also been cited as an effective reinforcer for repetitive tasks, as stuffing envelopes (Richman, 1976), reducing out-of-seat behavior (Davis, Wieseler, & Hanzel, 1982) and a variety of simple manual tasks (Cotter, 1971). Effectiveness has even been demonstrated using profoundly retarded subjects (Hanzel, 1980). Non-contingent music, however, likely has little if any effect on academic performance or activity level (Spudis & Somerville, 1978).

Favel and Cannon (1976) experimented with toy preference and found musical and electronic toys to be represented heavily in the "most preferred" category (as measured by the number of minutes their severely retarded clients played with each). Age and developmental level

likely effect toy preference but only rudimentary work has been completed in this area (Anderson, Zia, Springfield, Greer, 1977; Wheman, 1976).

Pro-social Behavior as a Target Response

Such behavior as noncompliance, inattentiveness, and socially disruptive interactions have been designated as sources of problems inhibiting a child's success in the school environment. It has been noted that these deviant school behaviors have a dual negative effect in that "they frustrate and thus deter teachers and others from interacting positively with the children, and they inhibit the children's learning of important skills" (Budd, Leibowitz, Riner, Mindell, & Goldfarb, 1981).

Prosocial behavior seems particularly adapted to manipulation through modeling in which models identifiable to the subject perform cooperative or compliant acts and are rewarded for them (Holoka-Hegedus, 1974; Tofte-Tipps, Mendonca, Peack, 1982).

Prosocial behavior is frequently introduced to a child and reinforced as a competing response to aggressive behavior (Chittenden, 1942; Oden & Asher, 1977; Strayer, 1976), which is a common problem in mentally retarded children and a frequent cause of referral to mental health centers (Greiger, Kauffman, and Greiger, 1976). Compliant and cooperative behaviors are desirable behaviors in

themselves as well; a child showing little sharing or helping behavior is less likely to be the object of positive social behavior emitted by peers, since there seems to be a demonstrable reciprocity associated with such behaviors (Wilson, Robertson, Herlong, & Haynes, 1979). Such limited social behavior will reduce the frequency of social interactions which are important for the formation of linguistic and cognitive development (Gable, Hendrickson, & Strain, 1978).

Prosocial behavior is significantly related to age (Midlarsky & Bryan, 1967) and hinges on a child's social inferential ability, specifically the capacity to interpret others' behaviors and changes in behavior (Barnett & Yarrow, 1977). An important consideration is that many responses of any one child will be correlated in time with behaviors of other children. When concerned with one child's behavior the researcher must look at how that behavior relates to that of peers (Wahler, 1967). One can effect a positive change in prosocial behavior just by reinforcing peers for appropriate interactions with the subject without the subject even being involved in any direct manipulation (Strain & Timm, 1974).

Ability to learn behaviors such as sharing and nurturance from models is seen in preschool and elementary children (Desmond, 1978) and behavior modification procedures have been used in shaping cooperative behavior

responses in a wide variety of populations including early childhood schizophrenics (Hingtgen and Trost, 1966).

Apolloni and Cooke (1975) summarize the three approaches that exist in common use to train retarded individuals in prosocial behavior. These are direct shaping and differential reinforcement, antecedent programming, and imitation training, with at least some successes documented in all three methodologies.

Early workers found verbal statements by models not to influence sharing behaviors (Bryan & Walback, 1970; Midlarsky & Bryan, 1970). These studies presented only verbal recommendations to share or normative statements such as "it's good to share" with no inclusion of consequences of the given behavior for the model or the recipient of the behavior (Staub, 1975). Showing the model being rewarded is seemingly standard practice if not a requisite in observational learning of prosocial skills. Glover and Gary (1975) report that the consequences of a model's actions largely determine the acquisition of the target behavior, though there is some evidence that a behavior may still be imitated even if no consequences are apparent. Negative consequences applied to a model have been found to produce a modest reduction in a behavior (Rosekrans, 1967). Certainly recent work in this area has tended to incorporate consequences into modeling episodes (Barrett & Young, 1977; Harris, 1970; Holoka-Hegedus, 1974; Karniol & Ross, 1977;

Oden & Asher, 1977; & Staub, 1975).

Behavior Modification Procedures
with the Retarded--
Successes, Problems, and Limitations

Developing a behavior with modeling is fairly straightforward and the procedures relatively well-defined, as noted in the previous pages. The area is not without some problems, however. Of primary concern is that modeling takes time from the other duties of the teacher and the student, and unless separate facilities and staff are available so that the student can be presented with the models elsewhere, the schedule of the entire class may be effected. Additionally, with mentally retarded students, proper attention to the model is a prime consideration in the effectiveness of the procedure; the modeling episode must be interesting enough to attract and then hold the student's attention yet effective enough for him to grasp the relevant information. Generalization beyond the specific target behavior and retention of the concept seem to be frequently difficult to attain (Gelfand & Hartmann, 1975).

Bartholomew (1976) cited the potential of using the subject's play/recreation time to learn or gain concepts, but little serious thought has gone into the designs of products to further this approach. Favel and Cannon (1976) echo this lack of previous research into the constructive use of play time and note that one is not only losing time

that could potentially be put to more productive use, but undesirable behaviors (such as stereotypic, aggressive or destructive) may result if the child isn't constructively occupied.

To teach anyone anything one must first have and then hold their subject's attention. This seems a particularly important consideration when dealing with retarded individuals, as noted in the previous discussion of the attention-deficit hypothesis. Evidence has been cited (Haney & Ullmer, 1975) to suggest electronic media does indeed have this attraction capability. Additionally rock music has shown effectiveness as a reinforcer for elementary and junior high children in both normal and special education classes, and for the severely retarded (Madsen, Dorrow, Moore, & Womble, 1976; Miller, 1976; Richman, 1976; Wilson, 1976).

Personal observation has suggested an intense interest on the part of mentally retarded adolescents to listen to rock music. It is interesting to note how many such individuals (and typical teenagers as well) carry transistor radios as constant companions. In addition to enjoying the music their conversation suggests they also follow the programming of the radio station quite closely, knowing each disc jockey's particular personality and style.

Satiation is a great concern in the design of behavior modification programs (Gelfand & Hartmann, 1975). The

reinforcing value of music itself, perhaps owing to the variety from song to song, seems to lead to a fairly low level of satiation (Miller, 1976). The fact that children tend to listen to music and radio on their own as a frequent free choice behavior indicates that making listening to music on a radio a reasonably unsatiated response (Garreston, 1966).

Generalization and durability are not always easily established in a behavior modification program (Bootzin, 1975). Since most students seem to show at least some degree of compliant behavior in classroom situations it follows there must be some reinforcement operating to maintain this behavior. Ideally this external reinforcement would serve to maintain behavior learned during the course of a treatment program and supplant the artificial reinforcement structure provided during an experiment. Gelfand and Hartmann (1975) report that observational learning is particularly suited to social learning situations in which the model illustrates the desired behavior and is rewarded for it in a context similar to that of the subjects', thus demonstrating the naturally occurring reinforcers.

Goals of Thesis

The purpose of the present study is to devise a means by which to make a constructive use of children's fascination with and attention to radio by teaching

desirable behaviors via this medium. This will be accomplished by investigating the combination of contingency contracting with modeling; listening to music on radio will be used as a reinforcer while episodes incorporating models illustrating appropriate behavior will be interspersed in radio broadcasts (as commercials are on conventional radio broadcasts). The intent is that students, just reinforced by being given a radio in return for initial attempts at increasing the emission of the target behavior, will then be exposed to models that may help them further emit desired behavior by illustrating appropriate examples of the behavior and the naturalistic reinforcement opportunities that exist to maintain such behaviors in their environment. Different versions of the modeling episodes will be written to include a variety of situations that might typify those actually encountered by adolescents and thus aid in generality.

To avoid interruption of class time the treatment procedure will be implemented during free play periods.

The goal of this work is threefold; first to examine the process of acquiring a prosocial skill via auditory modeling (most of the work done thus far has been with visual or live models) and secondly to establish the effectiveness of radio broadcasts of rock music and modeling episodes as a reinforcer. A third consideration is to look for significant interactions between the contingency scheme and the models to note if a stronger learning effect can be

observed by combining the two techniques.

METHOD

Subjects

Twelve children mentally handicapped youngsters were used as subjects in the present study. Seven of the subjects were male and five female, with ages ranging from fourteen to nineteen years; all were diagnosed as Trainably Mentally Retarded.

Subjects were selected based on teacher recommendations as to which students would be likely to benefit most from treatment, and had no limitations that might confound the experiment (hearing impairment, for example). Only students for whom parental consent was obtainable were included in the study.

Ethical Considerations

The first important step before any initiation of treatment was obtaining permission of the subjects' parents or guardians to include their children in the experiment. Ethical practice also requires the investigator to provide an explanation of the program, in particular any aspects of it that might possibly effect willingness to grant participation. The point must be made that participation is voluntary and the client may be withdrawn from treatment at any time (American Psychological Association, 1972).

The treatment procedure and permission forms had been

approved prior to use by the University of Nebraska Human Subjects Review Committee (See Appendix).

The principal of the school from which subjects attended explained to parents that the goal of the procedure was to maximize behaviors generally thought of as desirable in the educational setting.

Permission of the subjects was also obtained in the form of a behavior contingency contract. As part of this step of the experiment the procedure and its goals were explained individually to each subject.

Setting

This study took place in a school for mentally and physically handicapped youngsters in Council Bluffs, Iowa. The program was part of the public school system for children that were not mainstreamed into the regular city schools. The school was administered by the Loess Hills Area Education Agency (Educational Area XIII) of the State of Iowa in conjunction with the Council Bluffs Public School system. The present study was undertaken during the summer school session. During this period the children were in attendance from 8:30 until noon Monday through Friday. The summer curriculum involved classroom activities, organized group games, and free play time. There were four classes of approximately six students each; the schedules of each class was staggered in such a way that only one class was in the gym, play room, or classroom at a time. The present

study involved three of the classes. In all three classes the free play time was immediately following the classroom session.

Procedure

The purpose of the study was to enhance cooperative behavior and decrease noncompliant behavior in the classroom setting.

Dependent Variable

Reduction of noncompliant behavior was suggested by classroom teachers as a desirable goal of treatment, with its reduction opening the way to more appropriate behaviors.

Noncompliance was behaviorally defined as:

1. No visible attempt to carry out the teacher's command within five seconds; this included inaction or inappropriate action in response to the command.

2. The teacher's repeated commands or prompts following an initial command were considered as additional instances of noncompliant behavior if they followed the original command by five or more seconds.

3. Cessation of an appropriate action prior to completion of the response was not in itself scored as noncompliant behavior.

These definitions were modifications of those used by Greiger, Kauffman, and Greiger (1976), Eisenberg-Berg and Hand (1979), Forehand, Sturgis, McMahon, Aguar, Green, Wells,

and Breiner 1979), and Warren and Baer (1976).

In addition to the dependent variable of noncompliance a second variable, aggressive behavior, was observed as a collateral measure.

Aggression was defined as a verbal or motor attack on a peer by a subject. This behavior was operationalized as:

1. Any verbalization threatening, forbidding an activity, or indicating negative judgments about a person or his property.
2. Motor attacks on peer's materials.
3. Pulling a toy away or physically resisting sharing.
4. Choking (placing one or both hands around neck of a peer).
5. Pushing a peer.
6. Pinching or poking.
7. Hitting or throwing an object at another person.
8. Kicking.
9. Verbally demanding acceptance into activity, property, or information.

These definitions are drawn from those suggested by Pinkston, Reese, LeBlanc, and Baer (1973), Serbin, Tonik, and Sternglanz (1977), and Zahavi and Asher (1978).

The descriptions above were modified during the pre-baseline observation period for application to the specific subjects and a list of "instances" and "non-instances" added to customize the behavioral definitions to

the specific subjects and their environment and clarify areas of disagreement between the observers.

Observational Techniques

The experimenter served as the primary observer with one other observer used during a pilot observation period consisting of four sessions to resolve vagueness in operational definitions of the behaviors, and to provide reliability checks throughout the experiment.

Since the subjects were drawn from three different classes with only four subjects in any one class at a time frequency counts of the dependent variables were conducted. Each instance of noncompliant and or aggressive behavior was recorded during each 30 minute observation period.

A tally mark was made on a data recording form in the box corresponding to the subject for each instance of one of the two behaviors.

At three points during the 30 minute session (after 10 minutes, 20 minutes, and immediately following the session) the primary observer would distribute the appropriate numbers of tokens to those students who had earned them. This was accomplished as quickly as possible with no comments on the part of the teacher or the observer and the class routine continued.

One session per week incorporated a second observer so that reliability could be calculated. The second observer was seated on the opposite side of the room from the primary

observer. The second observer, a Psychology graduate student, was present for the entire thirty minute period and recorded observations independently. The method used was that reported by Herbert (1972) for occurrence reliability. Calculation was via the following formula:

$$\frac{\text{AGREEMENTS}}{\text{AGREEMENTS} + \text{DISAGREEMENTS}} \times 100$$

"Agreements" were defined as intervals in which both observers agree on the number of instances of the target behavior.

Independent Variable

An oral contingency contract was developed for subjects in all four groups and the terms were explained and discussed individually with each child until feedback from the child was sufficient to suggest they understood the terms of the contract. For subjects in the "Contingency" groups (Groups #1 and #2) this contract contained a statement of the required behavior on their part, an explanation that tokens would be given upon compliance with these terms, the number of tokens exchangeable for radio listening time, and a clause stating that the contract would be reviewed by both parties after each week of the procedure. A child received one token for each compliant

response during the course of the observation session; no tokens were awarded for noncompliant responses or a lack of a response. Each token was exchangeable for five minutes with a radio.

Subjects in the "Non-Contingency" groups (Groups #3 and #4) had a similar contract but theirs described only that they would be given tokens and the terms under which these were exchangeable for radio listening time.

Tokens consisting of a 3 x 5 card with a picture of a radio drawn on one side were presented immediately after the session and could be exchanged for a radio during the subject's free play time which was the hour following the observation session. Because of the contiguity of the two sessions the subjects could exchange their tokens for a radio immediately after receiving them.

The general design was factorial in nature with two factors (models versus no models and contingent versus non-contingent receipt of radios).

This form took:

		<u>Factor A</u>	
		No Models	Models
<u>Factor B</u>	Contingency		
	Noncontingency		

Three subjects were randomly assigned to each condition. Factor "A" represents the presence or absence of models in the radio program material; there are two levels, one in which no models were included and the second containing models.

Two conditions also existed for factor "B". Level B1 is the contingency phase under which tokens were provided as rewards for compliant behavior as specified in the contract. Subjects in the non-contingency groups #3 and #4 (Level B2) were provided tokens but not as rewards; the number of tokens made available were unrelated to behavior but "yoked" to the number of tokens subjects in the contingency group received.

The number of tokens provided to members of each group was the same. Prior to the experiment each noncontingency subject was matched randomly with a subject from the contingency group. The noncontingency subject was permitted a radio for the same length of time during his or her free play period that was earned by the contingency group subject to which he or she was matched (Plutchik, 1974).

Radios given half the subjects (those of groups #1 and #3) were permanently tuned to a taped broadcast containing music and irrelevant announcements; the radios given the other half of the subjects (those of groups #2 and #4) were preset to a program composed of music and modeling episodes.

Scripts. Rock music used as the positive reinforcer in the procedure was taken from the top twenty singles from the "Billboard" Magazine Weekly Survey. The music was updated each week to conform with the current music survey.

The music was recorded onto an eight-track tape cartridge in random order. After every second song a sixty second vignette was added.

For the "Radio Without Models" condition the sixty second episode was an announcement containing information irrelevant to the experiment; promotional announcements distributed by the National Association of Broadcasters were used. These announcements featured recording stars telling why they listened to the radio.

In the "Radio with Models" condition the announcements were modeling episodes. Five different scripts for these episodes were used. In each episode models reached a confrontation over a situation relating to noncompliant or aggressive behavior. This problem was solved by either (1) a spontaneous suggestion on the part of one of the models or (2) by suggestions of appropriate behavior made by a hero figure. Following this, the appropriate behavior was engaged in by the models who were rewarded for their positive action, and the episode was closed with a statement of the rule that applied in the particular case (The "Moral of the Story").

Scripts created using the same criteria but also

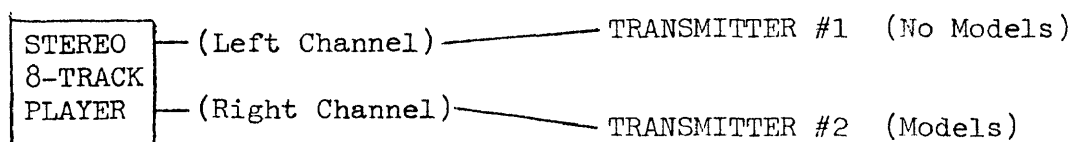
incorporating a single identifiable "hero" figure in the mold of the traditional Santa Claus, Tooth Fairy, and Easter Bunny or the more contemporary "Fonz", "Mork", "Captain Kirke", or "R-2-D-2" were alternated with straightforward modeling scripts.

The "hero" created for the present experiment was identified as "Captain Helper", and the scripts were written to cast him as a benevolent and pleasant individual that dispenses rewards and is welcomed by the subject's peers in the episodes. The criteria for writing these scripts were the same as those for the scripts without the "hero".

This experiment incorporated a bonus reinforcer each day. a thirty-second presentation called "Student of the Day" was added to the programs praising a subject's progress following a period of increase in target behavior for that subject. Over the course of the study each student was featured once as "Student of the Day".

Equipment. The "Radio Station" itself consisted of an eight-track tape player with tape cartridges on which the programs were recorded. Eight-track was selected because it would play continuously until shut off; no rewinding was required and thus there were no gaps in the programming. The two outputs of the tape player were plugged directly into two small transmitters (Lafayette Electronics Radio Broadcast Oscillators, stock number 99 F 01778). Two

programs needed to be aired at once (one program with models and one without) so the stereo capabilities of the eight-track unit were utilized, putting one program on the left channel and the other program on the right channel. Each of the two channels was plugged into a separate transmitter. Thus when the tape cartridge was played one program was broadcast on one frequency and a different program on a second frequency:



No license was required to use these small transmitters; they operated with a power of less than 100 milliwatts and were thus exempt from licensure under part 15 of the rules and regulations of the Federal Communications Commission (Federal Communications Commission, 1981).

Headphone radios (headphones with radios built in; Radio Shack stock number 12-186) were fixed to receive only the desired signal).

Baseline

Following a pilot session, a series of six observation periods were held; data from these was recorded as the baseline rate of the target behaviors.

Treatment

The treatment phase of the study was carried out over

a two week period consisting of nine total sessions.

Phase Out

After conclusion of formal treatment, a final set of phaseout scripts replaced those used in the treatment phase of the procedure. This latter set of episodes was written to closely parallel the particular subjects' actual environment and emphasized natural rewards, such as increased esteem from peers and praise from teachers. The goal was to have the subject incorporate the naturally occurring reinforcement structure for the target behavior operating in his environment.

Results

Two subjects were absent one day during the experiment but no subjects were dropped from the study.

Observation reliability was determined on four occasions during the course of the procedure. A percentage reliability score was calculated and ranged from 80 to 88% (80%, 86%, 82%, 88%) with a mean of 84%.

Equality of the four groups prior to the experiment with regard to the dependent variable (noncompliance) was created by randomly assigning the subjects to the four groups. To ascertain if this randomization did eliminate prior differences a one-way analysis of variance was performed for the pre-baseline (pilot observation session) scores and for the baseline scores. The analysis utilized

the mean of each subject's scores during the period in question used as data. No significant difference was found in the scores of groups at pre-baseline ($F(11) = .64, p > .05$) or during the baseline period ($F(11) = .32, p > .05$).

The experimenter and a second observer appeared in the classroom without introduction to the students for the pilot observation session. At the beginning of the baseline period the classroom teacher explained an experiment was going to be conducted and introduced the experimenter and second observer. To obtain an indication if the introduction of the observers and the teacher's comments effected levels of the target behavior, scores were compared between the pre-baseline period and the baseline period by means of a matched 't' test. Mean scores from each subject in each period were utilized, and yielded a nonsignificant result ($t(11) = .966, p > .05$), suggesting no significant alteration of behavior resulted from formal introduction of observers to the class and the teacher's explanation about the study.

Change in target behavior among the four groups following treatment was evaluated with a 2 x 2 analysis of variance in which the mean of each subjects treatment scores was employed as data. The contingency versus noncontingency variable proved nonsignificant ($F(1,8) = 1.35, p > .05$), failing to suggest any role of the behavior contract in the treatment. Conversely, analysis did

indicate significant differences between presence and absence of models ($F(1,8) = 5.84, p < .05$). There was no significant interaction.

A 2 x 2 analysis of variance (groups versus period) was employed to more closely examine the behavior changes occurring between baseline and treatment. Mean scores of the subject within each of the four groups were compared between the two periods. No significant differences were found between the four groups ($F(3,8) = 1.01, p > .05$) but a significant difference was found between periods ($F(1,8) = 11.34, p < .05$). There was no significant interaction ($F(3,8) = .004, p > .05$) (See Table 2).

The mean level of noncompliant responses for all groups in the two periods (baseline/treatment) are graphically presented in Figure 1.

While a single behavior was selected as the dependent variable a second variable, aggressive behavior, was observed as a collateral measure. The logic underlying the observation of the second behavior relates to the fact that compliance and aggression have been frequently studied together and compliant or cooperative behavior frequently is instituted with the intent of establishing it as an alternative to aggressive behavior. In the particular population observed in the present study, however, instances of aggressive behavior turned out to be virtually nonexistent. The low frequency rendered it inappropriate for statistical analysis.

Discussion

The results suggest that the exposure of the subjects to audio models illustrating appropriate target behavior is not sufficient to produce a significant reduction in noncompliant behavior but may prevent increases in noncompliant behavior. Behavior of the children in the two groups not exposed to models was observed to include more noncompliant behavior during the course of the treatment session than in the baseline session. The two groups receiving modeling episodes did not show this increase and exhibited a small decrease in noncompliant behavior (see Figure 1). The four groups were not significantly different with regard to the target behavior during baseline but diverged sufficiently to produce statistical significance by the end of the treatment session.

A variety of explanations for the increase in noncompliance are possible; some external event could have transpired that resulted in a generalized increase that was only manifest in the groups without models due to the positive effect of the models. Conversely some aspect of the procedure, perhaps provision of radios, resulted in increased noncompliance and the presence of behavior models countered the effect in two of the groups. It may be that the mere presence of "outsiders", the observers, caused a temporary improvement in behavior. As the students habituated to the presence of the observers the group

without models returned to their normal levels of behavior while the children exposed to models remained at the new level.

Past work in the literature supports the efficacy of models in modification of noncompliant behavior in children similar to the subjects of the present study but no precedent could be found for audio models. The considerably greater ease of production of modeling scripts, lowered production and equipment costs, plus portability of an audio modeling system could provide significant advantages over video or live models.

Contingency contracts have had much use with TMR children and much success. It might be argued that the lack of effectiveness in the present case could be due to the fact that radio with rock music programming is not an effect reinforcer. However, work has been reported citing a variety of different music forms as potent reinforcers. Suggesting that perhaps it would be more fruitful to look at the contract itself as a source of problems. The contract was drafted in accordance with suggestions taken from past research but was presented orally to each subject on an individual basis; it may be that the subjects did not fully understand the terms or their significance.

The lack of an immediate temporal contiguity between emitted behavior and provision of the earned token may have contributed to apparent ineffectiveness of the contract.

Behaviors were tallied and tokens presented only at ten minute intervals throughout the observation session.

The actual time each subject spent with a radio was not recorded in the present study, but might prove valuable to investigate in future research. In the present study it was assumed that a child did in fact listen to the radio the entire time he or she was provided with it; if the child had the radio turned off for any portion of the time the results and subsequent generalization would be effected. No attempt was made to ascertain that radios were "on" in the present investigation.

Alternatively, it may not be that the reinforcer wasn't effective; it is possible that the models merely were more efficient in creating a change in the target behavior or that the models were more potent instruments of behavior change. The procedure was terminated when behavior showed initial improvement and allowed to stabilize for a short period of time. If the two behavior change techniques required different lengths of time to demonstrate effect and the contract methodology had a longer onset, the treatment may have been concluded before the effect of the latter became visible.

In the present design the potential number of scored responses emitted by a child during a classroom session was limited to a large extent by the actions of the teacher. In the definitions used, only commands from the teacher

were considered in assessing behavior; in response to the teacher's command the child could comply and be provided a token, or not comply, with the latter being recorded as an instance of noncompliant behavior. The maximum number of responses was not solely limited by the teacher, however; a child speaking out of turn or leaving his or her seat would draw a command from the teacher even though she had been directing her attention toward a different student at that point.

No formal followup was possible due to the end of the summer session and a six week vacation at the school but it was hoped the scripts would illustrate a scheme of reinforcement for compliant behavior that approximated the reward structure for that behavior operating in the subjects' normal environment. The structure of the scripts was intended to show that compliance in the school situation had much more to offer as an interpersonal strategy than defiant or aggressive behavior. In addition, the vignettes hopefully provided examples of the actual types of behavioral and verbal components that could be extracted and incorporated into the clients' own repertoires

A potential problem exists inherent in the concept of combining a reinforcer and modeling exposure in the same medium. One could suppose the child with the poorer behavior has a greater need for positive models. With the

present design the converse is true; if behavior is poor the reinforcer (the radio) is presented less frequently and the child is exposed to fewer instances of modeling. While in the present study behavior levels of all of the subjects were sufficient to permit them at least a few minutes with the radio during each session it may be advantageous in the future to provide a certain minimum amount of listening time each session regardless of behavior or uncouple the two techniques entirely.

Another potential problem exists with children assigned to different treatment groups being in contact with each other. A subject may be exposed to an unanticipated live model if a peer belonging to a treatment group that is responding well changes behavior. The improved behavior may be unintentionally reinforced by the teacher or other students, or just the observation of the behavior change and the increased amount of time with the reinforcer (the radio) may illustrate a new behavioral strategy and reinforcement structure to a subject. While this is good if it contributes to the acquisition of a positive behavior by the subject, it does confound the experiment and potentially lead to incorrect conclusions. In the present study subjects of different treatment groups were in some cases members of the same class and thus exposed to each other's behavior.

With a small subject population there is always a

question of validity, out of concern that individual differences among subjects may in fact be confounding results. The lack of significance in the analysis comparing the scores of the subjects with regard to the dependent variable during the baseline period suggests the random assignment of subjects to groups did result in homogeneity in the present case.

Avenues of expansion might be to compare the efficacy of the audio models with live and video models. The present study supports the viability of audio models but if the magnitude of their intervention is significantly smaller than that of other options, their practical utility would be questionable. Conversely, if the audio system compared favorably, the gains in flexibility and lowered costs would be relevant.

Use of actual radios and a transmitter in the present procedure was an attempt to create the realism of listening to the radio, a behavior likely engaged in as a free choice activity on the part of the children during their out-of-school time. It was hoped by this to make a constructive use of children's observed fascination with and imitation of, media stars and heroes. To remain consistent with the goal of the present study to establish a simple and inexpensive means of providing exposure to models, it may be worthwhile to investigate usage of the procedure by simply plugging earphones or headphones into individual

portable cassette players. This would eliminate the technical step of having to internally fix the radios to tune only the desired signal.

No "disc jockey" was included in the tapes, just music and the scripts (in the models group) or irrelevant announcements (in the no models group). While inclusion of an "air personality" might have further lent a component of realism to the broadcast, it was feared that for the purposes of the present experiment any lack of consistency of the announcer's content or even vocal characteristics between tapes or within a tape could have confounded the results of the study.

During the course of the study the scripts were assumed to be equally efficacious. Though the attempt was to draft the scripts based on existing research in the literature, variations likely existed from episode to episode that may in themselves have been potentially relevant variables. Two distinct types of scripts existed; one group contained a hero figure ("Captain Helper") and the other set involved only students and a teacher. The two types were presented on alternating days during the procedure. While a determination of the relative effectiveness of each type of approach was not a primary objective of the present study a matched 't' test was employed to compare behavior scores of the days in which the "hero" scripts were used and alternate days incorporating episodes with the

straightforward scripts. Mean scores from each subject in the groups exposed to models were utilized. No significant difference was found ($t(8) = 1.08, p > .05$), but past research does hold some evidence a properly created central figure may be beneficial and future research should certainly not overlook this potential. In the present case the "hero" versus "nonhero" episodes were confounded by a time element; the "hero" scripts tended to run longer in duration (averaging 42 seconds) than the "nonhero" scripts (averaging 25 seconds). Thus on the days making use of the "hero" scripts the subjects were actually exposed to the models for a longer period of time and yet these were no more effective. Of course with a longer time being given to the model episodes there was less music played and this could have contributed to making the radio less reinforcing.

Some researchers (e.g., Bootzin, 1975) have suggested bonus reinforcers not part of the contractual reinforcement structure to be of value. With this in mind along with the hope of personalizing the simulated radio programming for the class a thirty-second "Student of the Day" salute was included each session. The narrator praised a particular student's accomplishments in school. Over the course of the treatment each student was a "Student of the Day". At the present time the effect of this procedure alone cannot be analyzed nor can its contribution to the overall

effectiveness of the procedure be evaluated.

Future research could investigate the usefulness of the audio models with other behaviors; if effective one "radio station" in a classroom may be useful to a variety of students with divergent needs.

Figure 1

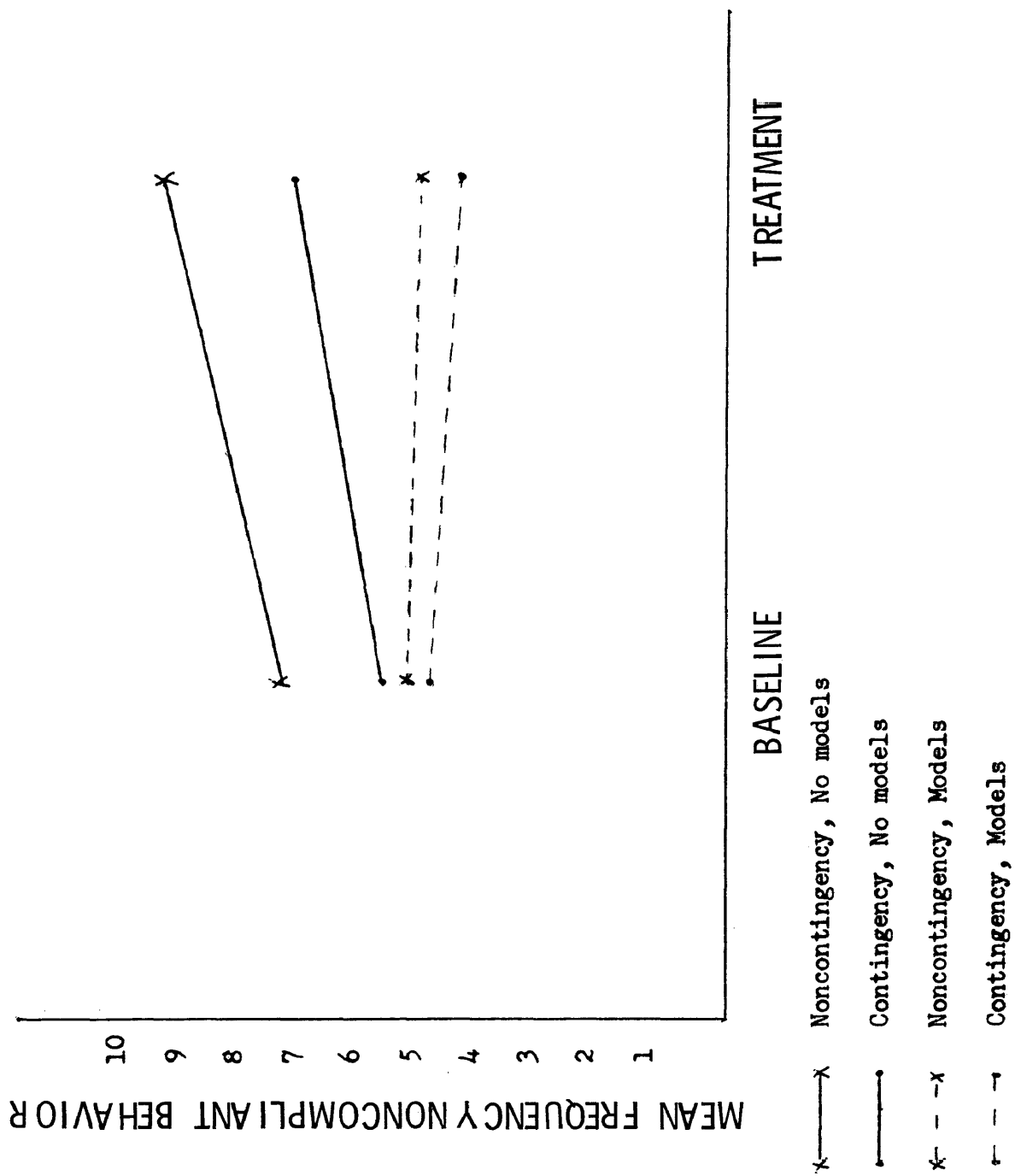


Table 1
Analysis of Variance:

Source	<u>df</u>	<u>MS</u>	<u>F</u>
A (Models / No Models)	1	18.75	5.84*
B (Contingent / Noncontingent)	1	4.34	1.35
A X B	1	.01	.004
Within	8	3.21	
Total	11		

* $p < .05$

Table 2
Analysis of Variance:

Source	<u>df</u>	<u>MS</u>	<u>F</u>
Total	23		
Between S _s	11		
Conditions	3	7.97	1.01
Error _b	8	7.86	
Within S _s	12		
Trials	1	8.62	11.34*
Trials X Conditions	3	.003	.004
Error _w	8	.76	

* $p < .05$

APPENDIX

Sample Scripts.....	50
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Captain
Helper-

HELLO THERE... MY NAME IS CAPTAIN HELPER... AND I PILOT A
STARSHIP. THAT'S RIGHT, A REAL LIVE SPACESHIP. I LISTEN
IN ON CLASSES LIKE YOURS AND IF I THINK KIDS NEED HELP I
DROP IN AND TALK TO THEM. YOU CAN'T SEE ME... I'M INVISIBLE,
BUT I'LL BE WATCHING YOU. THIS IS CAPTAIN HELPER SAYING
BE GOOD AND DO WHAT YOUR TEACHER TELLS YOU TO DO, BECAUSE
I'LL BE WATCHING YOU!

Narrator- LET'S LISTEN IN ON A CLASS AND FIND OUT IF FRED, ONE OF THE KIDS WHO IS TRYING VERY HARD NOT TO TALK OUT OF TURN IN CLASS TODAY, WILL REMEMBER. HIS TEACHER IS JUST ABOUT READY TO ASK BARBARA, ONE OF THE OTHERS IN THE CLASS, A QUESTION... THIS IS GOING TO BE TOUGH FOR FRED... HE KNOWS THE ANSWER AND WANTS TO SAY IT, BUT HE SHOULDN'T BECAUSE EVERYONE HAS TO TAKE TURNS IN CLASS... AND RIGHT NOW IT'S BARBARA'S TURN. LET'S SEE WHAT HAPPENS.....

Teacher- BARBARA, TELL ME WHAT THE WEATHER IS LIKE TODAY... WHAT WAS IT LIKE WHEN YOU CAME TO SCHOOL THIS MORNING?

Barbara- WELL, IT WAS WARM ALREADY...

Teacher- WAS IT CLOUDY OR WAS THE SUN SHINING?

Barbara- IT WAS VERY SUNNY.

Teacher- THAT'S GOOD BARBARA!

Narrator- BARBARA DID WELL... BUT FRED DID EVEN BETTER... FRED DIDN'T TALK OR TRY TO ANSWER THE QUESTION WHEN THE TEACHER WAS TALKING TO BARBARA! VERY GOOD FRED! IF YOU CAN KEEP FROM TALKING OUT OF TURN YOU WILL GET TO LISTEN TO THE RADIO TODAY!

Teacher- LET'S FILL OUT OUR CALENDARS NOW... JILL, CAN YOU START BY TELLING US WHAT MONTH IT IS?

Male
Student- HEY, I KNOW THAT!

Captain
Helper- HEY FRED... YOU SHOULDN'T HAVE SAID ANYTHING! YOUR TEACHER WAS TALKING TO JILL!

Male
Student- WHO ARE YOU?

Captain
Helper- MY NAME IS CAPTAIN HELPER... I OPERATE A BIG SPACE SHIP THAT CRUISES AROUND AND LISTENS IN ON CLASSES LIKE YOURS TO SEE IF I CAN BE OF HELP TO ANYONE. AND I THINK I CAN HELP YOU, FRED, BY REMINDING YOU THAT IT IS VERY GOOD TO ANSWER YOUR TEACHER'S QUESTIONS... BUT ONLY WHEN YOUR TEACHER IS TALKING TO YOU... UNDERSTAND FRED?

Male
Student- YES, CAPTAIN HELPER...

Captain
Helper- REMEMBER THAT FRED... WHEN YOU ARE IN SCHOOL ONLY TALK WHEN YOUR TEACHER ASKS YOU A QUESTION!

Male
Student- O.K., I'LL REMEMBER THAT CAPTAIN HELPER!

Captain
Helper- THAT'S GREAT FRED... AND REMEMBER THAT IF YOU ONLY TALK WHEN YOUR TEACHER ASKS YOU A QUESTION TODAY, THEN SHE'LL LET YOU LISTEN TO THE RADIO!

Captain
Helper-

HELLO EVERYONE... I JUST WANT TO TELL YOU ABOUT HOW WELL
GEORGE DID IN CLASS TODAY. GEORGE IS TRYING TO NOT TALK
OUT OF TURN IN CLASS... GEORGE KNOWS HE SHOULD ONLY TALK
IN CLASS WHEN HIS TEACHER ASKS HIM A QUESTION. I THINK
YOU DID VERY GOOD TODAY, GEORGE... YOUR TEACHER AND YOUR
WHOLE CLASS IS PROUD OF YOU!

Dear Parent:

54

We would like your child to participate in a study of behavior. We hope to find out the effectiveness of a new technique for positively changing children's behavior. Your child was selected as a possible participant because of his/her age and enrollment at _____.

If you permit your child to participate we will first get his/her teacher's permission. Your child will not be removed from his or her regular class setting nor will the usual day's routine be interrupted. Other children in the class will also be in the same experiment. Your child will be told that being cooperative with his/her classmates will result in receiving varying amounts of time to listen to the radio. The radio the child will be given is a "headphone radio"; the type where the radio is built into a pair of headphones. The child will be able to wear this headphone radio during a play period each day. The radio will play rock music. Between songs several sixty-second commercial-like messages will be played. These messages will actually be short "radio plays" in which actors verbally act out scenes typical to the child's school situation. The actors are of an age level that the student can identify with and the actors in the scenes encounter problems and situations similar to those the child faces in daily interactions with teachers and fellow students. The scene illustrates different ways a child can react to situations and shows the consequences of each action. It is hoped the child will relate to these verbal scenes and the actors will thus serve as models for the child's own behavior.

There are no physical or psychological risks involved with participating in the study. While your child may not directly benefit from this study the information from it may be useful in devising future programs that can be used to help positively promote desirable classroom behaviors.

Your decision whether or not to allow your child to participate will not affect your future relations with the University of Nebraska or your child's school. If you permit your child to participate, you are free to withdraw your consent at any time without prejudice.

If you have any questions, please contact Richard Warner, at 323-9989.

Although no injury is expected, if physical injury occurs as a direct consequence of these procedures, the medical care required to treat the injury will be provided at no expense to you, providing that the cost of such medical care is not reimbursable through your own health insurance. However, no additional compensation for loss of income, pain and suffering or other form of compensation will be provided as a result of such injury and any subsequent medical care, including hospitalization.

Please keep one copy of this form. A stamped addressed envelope has been provided so that you can mail the signed copy of this form which has been witnessed by another person at the time of your signature.

YOUR SIGNATURE INDICATES THAT YOU PERMIT YOUR CHILD TO PARTICIPATE HAVING READ THE INFORMATION PROVIDED ABOVE.

(Date)

(Signature of Parent)

(Witness)

(Richard Warner)

Dear Parent:

We would like your child to participate in a study of behavior. We hope to find out the effectiveness of a new technique for positively changing children's behavior. Your child was selected as a possible participant because of his/her age and enrollment at _____.

If you permit your child to participate we will first get his/her teacher's permission. Your child will not be removed from his or her regular class setting nor will the usual day's routine be interrupted. Other children in the class will also be in the same experiment. Your child will receive varying amounts of time to listen to rock music on the radio. The radios provided are "headphone radios" in which the radio is built into a pair of headphones that the child can wear during a play period each day.

There are no physical or psychological risks involved with participating in the study. While your child may not directly benefit from this study the information from it may be helpful in devising future programs that can be used to help positively promote desirable classroom behaviors.

Your decision whether or not to allow your child to participate will not affect your future relations with the University of Nebraska or your child's school. If you permit your child to participate, you are free to withdraw your consent at any time without prejudice.

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Please keep one copy of this form. A stamped addressed envelope has been provided so that you can mail the signed copy of this form which has been witnessed by another person at the time of your signature.

YOUR SIGNATURE INDICATES THAT YOU PERMIT YOUR CHILD TO PARTICIPATE HAVING READ THE INFORMATION PROVIDED ABOVE.

(Date)

(Signature of Parent)

(Witness)

(Richard Warner)

Dear Student:

I would like your help in doing an experiment. The experiment will try to find out if a method I have worked on to make children more helpful and sharing with their teachers and classmates works.

Your teachers and parents have told you that it is nice to share, and that you should do what they ask you to do. In this experiment all you would have to do is try and remember to share your toys with your classmates and help your teachers more than you have been. If you do you will get to listen to rock music on a radio during _____. If you are real good and share and help out a lot, you can listen for a long time... if you only share your toys and playthings sometimes then you can listen only for a short time.

What will you get by being in this experiment? In addition to getting to listen to the radio you might find yourself getting better at sharing and helping after the experiment; and you may get along better with your friends and teachers and you might even have more friends.

You do not have to be in this experiment if you don't want to, and if you do start you can stop any time you wish for any reason.

When using the information I get from this study I will not mention your name and I will not say anything specific about you in connection with your name.

If there is anything you don't understand about this experiment or if you have any questions, I will be happy to answer them now or at any time during the experiment.

YOUR SIGNATURE INDICATES YOU HAVE READ THE INFORMATION ABOVE AND DO WISH TO BE IN THE EXPERIMENT.

(Date)

(Your Signature)

(Witness)

(Richard Warner)



THE UNIVERSITY OF NEBRASKA
INSTITUTIONAL REVIEW BOARD
FOR THE PROTECTION OF
HUMAN SUBJECTS

OFFICE OF THE EXECUTIVE SECRETARY, IRB
THE UNIVERSITY OF NEBRASKA MEDICAL CENTER
42ND AND DEWEY AVENUE
OMAHA, NEBRASKA 68105
TELEPHONE (402) 541-7956

April 25, 1980

Richard W. Warner
1225 East Washington
Council Bluffs, Iowa 51501

RE: IRB #164-80

Dear Mr. Warner:

This office has made a preliminary review of your master's thesis proposal for a research project entitled, "Use of Radio to Provide Models and Reinforcers in Behavior Therapy: Increasing Cooperative Behavior in Retarded Children", and believes that you have provided adequate safeguards for the rights and welfare of the subjects to be involved in this study, and has therefore recommended your project for approval. This letter constitutes official notification of the tentative approval of your project. You may proceed in implementation of your project. The Board will meet on May 15, 1980 and at that time, final action will be taken.

We wish to remind you that, under the provisions of the General Assurance from the University of Nebraska to DHEW on the Protection of Human Subjects, the principal investigator or project director is directly responsible for keeping this Board informed of any changes involved in the procedures or methodology in the protocol, and for immediately reporting to the Board any unanticipated problems involving risks to the subjects or others. This project is subject to periodic review and surveillance by the Board, and, as part of their surveillance, the Board may request periodic reports for progress and results. For projects which continue beyond one year from the starting date, it is also the responsibility of the principal investigator to initiate a request to the Board for annual review and update of this clearance.

Sincerely yours,


Roy D. Westerfield
Executive Secretary, IRB

RDW/nas

cc: IRB Members

University of Nebraska

UNIVERSITY OF NEBRASKA
INSTITUTIONAL REVIEW BOARD
PROTECTION OF
HUMAN SUBJECTS

58
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OMAHA, NEBRASKA 68105
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June 16, 1980

Richard W. Warner
1225 East Washington
Council Bluffs, Iowa 51501

RE: IRB #164-80

Dear Mr. Warner:

Reference is made to my letters dated April 25, May 21 and June 4, 1980 and your letter dated June 2, 1980 concerning your research project entitled, "Use of Radio to Provide Models and Reinforcers in Behavior Therapy: Increasing Cooperative Behavior in Retarded Children".

The Institutional Review Board for the Protection of Human Subjects has completed its second review of your proposal for this research project, including the revised material submitted in response to our request, and has unanimously approved the project. This letter constitutes official notification of the approval and release of your project by our Board and you are, therefore, authorized to implement this study accordingly. Information furnished in paragraph two of my letter of April 25, 1980 applies.

Sincerely yours,



Roy D. Westerfield
Executive Secretary, IRB

RDW/nas

cc: IRB Members

References

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